

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number
WO 2005/020272 A2

(51) International Patent Classification⁷: **H01J 37/00**

[GB/GB]; 106 Waterhouse Lane, Chelmsford, Essex CM1 2QU (GB).

(21) International Application Number:
PCT/GB2004/003533

(74) Agent: **LOVELESS, Ian, Mark**; 16 Theobalds Road, London WC1X 8PL (GB).

(22) International Filing Date: 17 August 2004 (17.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0319389.3 18 August 2003 (18.08.2003) GB

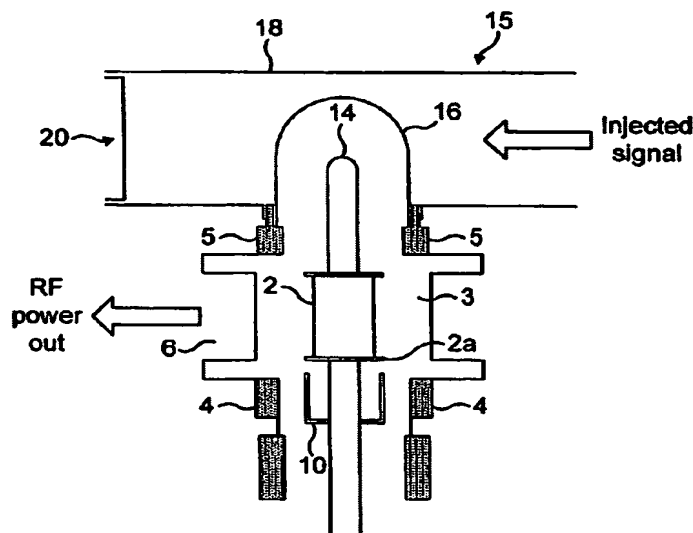
(71) Applicant (for all designated States except US): **E2V TECHNOLOGIES (UK) LIMITED** [GB/GB]; 106 Waterhouse Lane, Chelmsford, Essex CM1 2QU (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: **MAGNETRON**



(57) Abstract: A phase locked magnetron comprises a cathode and anode and an interaction space in between. The cathode is coupled to an injected locking signal, which prompts the operation of the magnetron to be in phase with the phase of the locking signal. From a magnetron of the type in which the cathode is at a large negative potential, the coupling to the locking signal is by non-contact means, in particular, by extending the cathode into a waveguide in which the locking signal is present. An alternative arrangement is for a magnetron of the type in which the cathode is substantially at ground potential. In this arrangement the coupling is by direct electrical connection to a conductor having the injected locking signal.

BEST AVAILABLE COPY

WO 2005/020272 A2